Earth Science

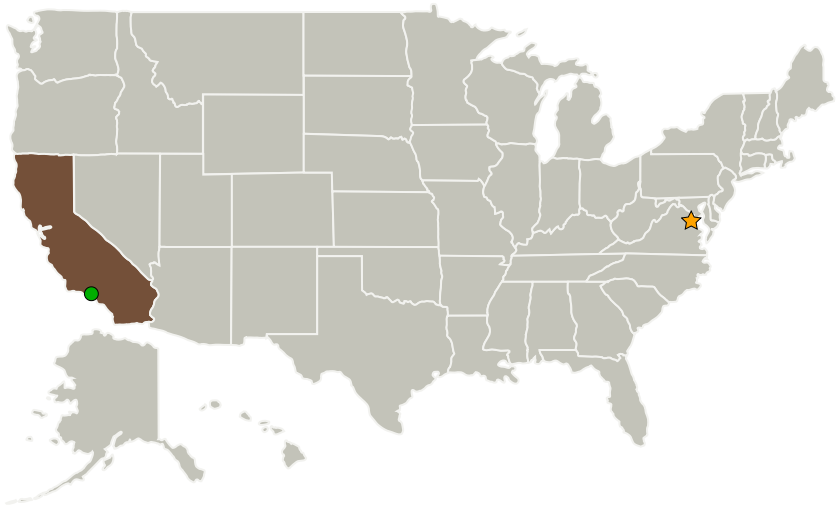
Precision Deployable Mast for the SWOT KaRIn Instrument

Completed Technology Project (2012 - 2015)

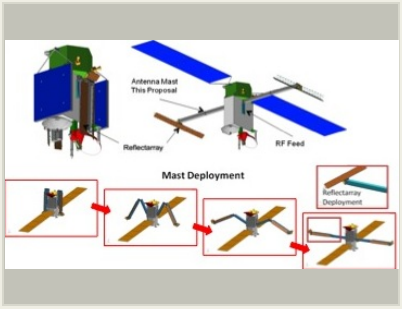
Project Introduction

Design and prototype a lightweight, precision-deployable mast for the Ka-band Radar Interferometer (KaRIn) antennas in the Surface Water and Ocean Topography (SWOT) mission.
Performance goals are:
Azimuth pointing deployment precision: < 0.11°
Elevation stability: < 16 milli-arcsec
First mode frequency: > 10 Hz
Technologies including a precision deployable mast containing a multi-joint cable driven precision latch mechanism and a pointing adjustment mechanism.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★NASA Headquarters(HQ)	Lead Organization	NASA Center	Washington, District of Columbia
●Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



Project Image Precision Deployable Mast for the SWOT KaRIn Instrument

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Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Lead Center / Facility:

NASA Headquarters (HQ)

Responsible Program:

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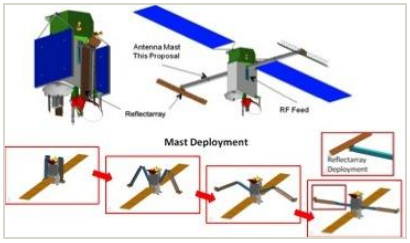
Primary U.S. Work Locations

California

Images



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Project Image Precision Deployable Mast for the SWOT KaRIn Instrument
(https://techport.nasa.gov/image/1597)

Project Management

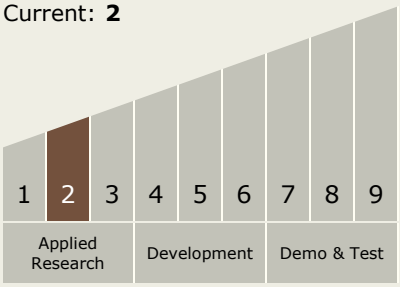
Program Director:
George J Komar

Project Manager:
Joseph Famiglietti

Principal Investigator:
Gregory S Agnes

Technology Maturity (TRL)

Start: **2**
Current: **2**



Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.2 Radio Frequency
    - TX05.2.6 Innovative Antennas

Target Destination

Earth